UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/839,023	04/20/2001	Kannan Raj	ITL.0462US (P9816)	2391

21906 7590 09/28/2007
TROP PRUNER & HU, PC
1616 S. VOSS ROAD, SUITE 750
HOUSTON, TX 77057-2631

EXAMINER	
SINGH, DALZID E	
ART UNIT	PAPER NUMBER
2613	
MAIL DATE	DELIVERY MODE
09/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/839,023	RAJ ET AL.	
	Examiner	Art Unit	
	Dalzid Singh	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,7-15 and 17-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-15 and 17-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-4, 7-15, 17-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites, "... each transceiver to notify a first of the three transceivers when a second of the three transceivers is receiving a signal from a third of the three transceivers." There is no support for such limitation in the disclosure as originally filled as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 11 recites, "... notifying a first when a second system is receiving an optical communication from a third system." There is no support for such limitation in the disclosure as originally filled as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 21 recites, "...notify a first processor when a second processor is receiving an optical communication from a third processor". There is no support for such limitation in the disclosure as originally filled as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

On page 8 lines 20-25, the specification discloses, "The optical receiver 26 tuning is done in sequence. When the code is matched with the receiving processor 12 at the wavelength of interest, the wavelength is locked for that receiver 26. The receiver 26 indicates a processor "busy" flag ***for all other processors*** 12 until it sets a processor "free" flag for all other processors 12. This suggest that all processor receives the flags and not as suggested by the claims.

Furthermore, on page 9, lines 20-26, the specification discloses, "When the wavelength signal is received, as determined in diamond 44, the processor busy flag or status bit is set as indicated in block 46. The status bit ***may then be multicast*** to all the other processors 12 in the system in accordance with one embodiment of the present invention,..." This suggest that all processor receives the flags and not as suggested by the claims.

3. Claims 1-4 and 7-10 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The steps of communicating with other processor is critical or essential to the practice of the invention, but not included in the claim(s) is

not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The claim omits matter disclosed to be essential to the invention as described in the specification (the steps of communication as described on flow diagram 3A and 3B and on pages 6-10 of the specification) are not cited in the claims.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-4 and 7-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999).

The term "device" in claim 1 is used by the claim to mean "system", while the accepted meaning is "device." The term is indefinite because the specification does not clearly redefine the term. The specification discloses system and does not disclose the term "device".

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-4 and 7-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Deri et al (US Patent No. 6,411,418).

Regarding claims 1 and 11 (in view of the 112 rejection), Deri et al discloses optical communication system comprising:

an optical transceiver including a wavelength division multiplexer to enable optical communication with the other two transceivers (see col. 2, lines 37-64 and col. 5, lines 17-23).

Regarding claim 2, Deri et al teach the that the optical transmitter includes a laser (see Fig. 2).

Regarding claim 3, Deri et al teach the use of wavelength filter tunable to a particular input wavelength, which is located at the node (see col. 4, lines 1-5 and col. 6, lines 48-54).

Regarding claims 4 and 12, Deri et al teach that each processor is assigned a wavelength for communicating with the other processors located at other node (col. 5, lines 65-67 to col. 1-11).

Regarding claim 9, Deri et al teach that each optical transceiver within a node transmits a light beam together with a code identifying a sending and a receiving processor (see col. 5, lines 54-64 and col. 6, lines 18-47).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-4, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakata (US Patent No. 5,500,857) in view of Li et al (US Patent No. 6,385,371) and further in view of Asahi (US Patent No. 6,195,186) or Mo et al (US Patent No. 6,693,909).

Regarding claim 1 (in view of the 112 rejection), Nakata discloses optical communication system, as shown in Fig. 7, comprising:

an optical transceiver including a wavelength division multiplexer to enable optical communication with the other two transceivers (as shown in Fig. 7, Nakata shows multiple nodes (21-26), wherein each node comprises of optical transceiver, see

col. 5, lines 32-35) to notify a first of the three processor when a second of the three processor is receiving a signal from a third of the three processor (in col. 17, lines 27-52, Nakata teaches notifying a first processor (node) when a second processor (node) is receiving a beam from a third processor (a busy signal inserted into a frame pulse is transmitted as a token to go around the transmission line; since the frame pulse goes around the transmission lines, therefore other nodes or processor is notified through the management table that a particular wavelength is being used).

Nakata differs from these claims in that Nakata does not specifically disclose a processor coupled to each optical transceiver. However, it is extremely well known that optical transceiver comprises processor to process the signal. As disclosed by Nakata, since the nodes communicate by transmitting and receiving optical signal, therefore it would have been obvious that there exist processor to process the optical signal. Asahi and Mo et al is cited to show such well known concept. On Fig. 16, Asahi shows processor coupled to the data transceiver and on Fig. 3, Mo et al show processing system at the node. As evidenced by the prior arts, it is well known to provide processor at the nodes to process the signals. Therefore, it would have been obvious to an artisan of ordinary skill in the art to couple processor to the optical transceiver of Nakata. One of ordinary skill would have been motivated to do such in order to efficiently control operation of the optical transceiver in transmitting and receiving of information signal.

Furthermore, since the optical transceiver within a node is connected to other optical transceiver at other nodes (for example, in Fig. 7, Nakata shows that the nodes are interconnected in a ring configuration), therefore processor of optical transceiver at one node location is coupled to other processor of optical transceiver located at other node locations.

Regarding claim 2, in col. 5, lines 30-32, Nakata teach the that the optical transmitter includes a laser.

Regarding claim 3, in col. 5, lines 22-25, Nakata teaches the use of wavelength filter tunable to a particular input wavelength, which is located at the node.

Regarding claim 4, in col. 5, lines 42-45, Nakata teaches that each processor (processor within the node, see claim 1) is assigned a wavelength (for example, λ_1) for communicating with the other processors located at other node.

Regarding claim 9, in col. 5, lines 55-60, Nakata teaches that each optical transceiver within a node transmits a light beam together with a code identifying a sending and a receiving processor (the code is in a form of an address within the packet of the signal to indicate self address and destination address).

Regarding claim 10, in col. 17, lines 27-52, Nakata teaches that when one processor is receiving a wavelength division multiplexed signal from another processor, the one processor broadcasts to all other processors that the one processor is busy (since a busy signal is indicated by inserting a 1 into a frame pulse, which is transmitted and circulated around the transmission line, therefore busy signal is being

broadcast form one optical transceiver containing processor to other optical transceiver containing processor).

10. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakata (US Patent No. 5,500,857) in view of Li et al (US Patent No. 6,385,371) and further in view of Huber (US Patent No. 6,687,428).

Regarding claim 7, as discussed above the combination of Nakata and Li et al disclose optical coupler and differs from the claimed invention in that the combination does not disclose that the coupler includes dispersive element to disperse the reflected light. Huber et al teach the use of dispersive element to disperse light after being reflected by the reflector (Fig. 4 shows dispersive element (38) to disperse light after being reflected by the reflector).

Regarding claim 8, as discussed in claim 7, furthermore, Huber et al show that the dispersive element includes a micro-mechanical structure (see col. 5, lines 46-48).

11. Claims 11-15 and 17-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakata (US Patent No. 5,500,857) in view of Asahi (US Patent No. 6,195,186) or Mo et al (US Patent No. 6,693,909).

Regarding claim 11 (in view of the 112 rejection), Nakata discloses optical communication system, as shown in Fig. 7, comprising:

an optical transceiver including a wavelength division multiplexer to enable optical communication with the other two transceivers (as shown in Fig. 7, Nakata shows multiple nodes (21-26), wherein each node comprises of optical transceiver, see col. 5, lines 32-35); and

notifying a first processor when a second processor is receiving an optical communication from a third processor (in col. 17, lines 27-52, Nakata teaches notifying a first processor (node) when a second processor (node) is receiving a beam from a third processor (a busy signal inserted into a frame pulse is transmitted as a token to go around the transmission line; since the frame pulse goes around the transmission lines, therefore other nodes or processor is notified through the management table that a particular wavelength is being used).

Nakata differs from these claims in that Nakata does not specifically disclose a processor coupled to each optical transceiver. However, it is extremely well known that optical transceiver comprises processor to process the signal. As disclosed by Nakata, since the nodes communicate by transmitting and receiving optical signal, therefore it would have been obvious that there exist processor to process the optical signal. Asahi and Mo et al is cited to show such well known concept. On Fig. 16, Asahi shows processor coupled to the data transceiver and on Fig. 3, Mo et al show processing system at the node. As evidenced by the prior arts, it is well known to provide processor at the nodes to process the signals. Therefore, it would have been obvious to an artisan of ordinary skill in the art to couple processor to the optical

transceiver of Nakata. One of ordinary skill would have been motivated to do such in order to efficiently control operation of the optical transceiver in transmitting and receiving of information signal.

Furthermore, since the optical transceiver within a node is connected to other optical transceiver at other nodes (for example, in Fig. 7, Nakata shows that the nodes are interconnected in a ring configuration), therefore processor of optical transceiver at one node location is coupled to other processor of optical transceiver located at other node locations.

Regarding claim 12, in col. 5, lines 42-45, Nakata teaches that each processor (processor within the node, see claim 1) is assigned a wavelength (for example, λ_1) for communicating with the other processors located at other node.

Regarding claims 13 and 22, in col. 5, lines 51-67 to col. 6, lines 1-12, Nakata teaches step including scanning for the wavelengths of any of said other processors (the optical frame pulse is received detect or scan for available wavelength).

Regarding claims 14 and 23, in col. 5, lines 51-67, Nakata teaches that the node transmitting a light beam having a predetermined wavelength, and transmitting a code that identifies the transmitting processor and the intended receiving processor (the code is the packet signal including the self and destination address which is converted to a particular wavelength, for example λ_a, and transmitted on the transmission line).

Regarding claims 15 and 24, in col. 6, lines 5-12, Nakata teaches that the receiving processor identifies the wavelength of the incoming beam and the code

accompanying said beam, and locks to the wavelength of the transmitting processor (the node checks for available wavelength by identifying the wavelength of the incoming beam, which is included in the management table, if there is an available wavelength, then select or lock that wavelength for communication).

Regarding claims 17, 25 and 27, in col. 17, lines 27-52, Nakata teaches notifying a first processor (node) when a second processor (node) is receiving a beam from a third processor (a busy signal inserted into a frame pulse is transmitted as a token to go around the transmission line; since the frame pulse goes around the transmission lines, therefore other nodes or processor is notified through the management table that a particular wavelength is being used).

Regarding claims 18 and 26, in col. 18, lines 33-38, Nakata teaches indicating when said second processor is no longer communicating with said third processor (processor within the nodes informs other nodes when communication is finished or completed).

Regarding claim 19, in col. 5, lines 53-67, Nakata teaches using a code (for example, packet containing self and destination address) transmitted by the third processor (node) to determine if a given processor (node) is the intended recipient of a beam transmitted from the third processor (the recipient processor receive the address and determine whether the transmitted signal is intended for it).

Regarding claim 20, as discussed above, since the communication signal is transmitted in optical form (for example, wavelengths are transmitted from one node to the other nodes), therefore the processors (node) are optically interconnected.

Regarding claim 21 (in view of the 112 rejection), Nakata discloses optical communication system, as shown in Fig. 7, comprising:

identify a light communication from a node intended for said first node (in col. 5, lines 51-67 to col. 6, lines 1-28, Nakata teaches that wavelength between the nodes are assigned to be different wavelengths);

tune to said wavelength (each of the nodes are tuned to the assigned wavelength, see col. 5, lines 43-50); and

notifying a first processor when a second processor is receiving an optical communication from a third processor (in col. 17, lines 27-52, Nakata teaches notifying a first processor (node) when a second processor (node) is receiving a beam from a third processor (a busy signal inserted into a frame pulse is transmitted as a token to go around the transmission line; since the frame pulse goes around the transmission lines, therefore other nodes or processor is notified through the management table that a particular wavelength is being used).

Nakata differs from these claims in that Nakata does not specifically disclose a processor coupled to each optical transceiver. However, it is extremely well known that optical transceiver comprises processor to process the signal. As disclosed by Nakata, since the nodes communicate by transmitting and receiving optical signal,

therefore it would have been obvious that there exist processor to process the optical signal. Asahi and Mo et al is cited to show such well known concept. On Fig. 16, Asahi shows processor coupled to the data transceiver and on Fig. 3, Mo et al show processing system at the node. As evidenced by the prior arts, it is well known to provide processor at the nodes to process the signals. Therefore, it would have been obvious to an artisan of ordinary skill in the art to couple processor to the optical transceiver of Nakata. One of ordinary skill would have been motivated to do such in order to efficiently control operation of the optical transceiver in transmitting and receiving of information signal.

Furthermore, since the optical transceiver within a node is connected to other optical transceiver at other nodes (for example, in Fig. 7, Nakata shows that the nodes are interconnected in a ring configuration), therefore processor of optical transceiver at one node location is coupled to other processor of optical transceiver located at other node locations.

Regarding claim 28, in col. 5, lines 4-21 and 40-42, Nakata teaches the use optical communications and wavelength division multiplexing.

Regarding claim 29, in col. 5, lines 43-50, Nakata teaches that the first processor-based system (node) to communicate with other processor-based systems (node) using an assigned wavelength (for example, λ_1 is used for communication between node 22 to node 25).

Regarding claim 30, in col. 5, lines 51-57, Nakata teaches that the first processor-based system (node) to transmit a code (a code or packet containing self and destination address) that identifies said first processor-based system (node) and an intended receiving processor-based system (node).

Response to Arguments

12. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Since it is unclear what limitation is applicant intending to cover, at this time the prior art rejections still read on the claimed limitation.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is (571) 272-3029. The examiner can normally be reached on Mon-Fri 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

September 21, 2007

DALZID SINGH
PRIMARY EXAMINER
Dalzid Singh